



# Life Detection Workshop

Scripps Institution of Oceanography

February 15-17, 2012



## Workshop Agenda

### document retrieval

[www.planetaryprotection.nasa.gov/lifedetection2012](http://www.planetaryprotection.nasa.gov/lifedetection2012)

### document submission

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(or by flash drive)

**Wednesday, Feb. 15, 2012**

Time	Activity	Facilitator
2:00-2:30 PM	<b>Welcome</b> <ul style="list-style-type: none"><li>• Introductions</li><li>• Workshop Objectives</li><li>• Workshop Structure</li></ul>	Kminek, Conley
2:30-3:30	<b>Recap of Life Detection Conference</b> <ul style="list-style-type: none"><li>• Highlights of Lessons Learned</li><li>• Identification of Remaining Questions/Issues</li></ul>	Steele, Voytek
3:30-4:00	<b>Piñata Protocol</b> <ul style="list-style-type: none"><li>• Returned Sample Handling</li><li>• Life Detection Protocol</li><li>• Criteria for release?</li></ul>	Conley
4:00-4:30	<b>Break</b> (catered)	All
4:30-6:00	<b>Tour de Table</b> <ul style="list-style-type: none"><li>• 'Lightning' Talks</li><li>• Talk = 1 slide, 2-3 minutes</li></ul>	All
6:00-7:00	<b>Vino y Queso</b> (catered)	All

## Thursday, Feb. 16, 2012

<b>Time*</b>	<b>Activity*</b>	<b>Facilitator</b>
8:00-8:30 AM	<b>Coffee and Wake up Time</b> (catered)	All
8:30-9:00	<b>Workshop Goals</b> <ul style="list-style-type: none"> <li>• Key Points &amp; Issues</li> <li>• Identify Chairs and Co-Chairs &amp; Organize Groups</li> </ul>	Conley, Kminek
9:00-10:30	<b>1<sup>st</sup> Breakout Session (3 groups)</b> <ul style="list-style-type: none"> <li>• How would you detect signs of life in samples from an environment, assuming no prior knowledge of local life?</li> <li>• Each group will have biology expertise in these areas: <ul style="list-style-type: none"> <li>○ Deep Ocean/Subsurface</li> <li>○ Glacier/Permafrost</li> <li>○ Hyperarid/Hypersaline</li> </ul> </li> </ul>	Breakout Chairs
10:30-11:00	<b>Break</b> (catered)	All
11:00-11:15	<b>Report on Breakout Session</b> <ul style="list-style-type: none"> <li>• 5 minutes per group</li> </ul>	Breakout Chairs
11:15 AM-12:00 PM	<b>Discussion of 1<sup>st</sup> Breakout Session</b> <ul style="list-style-type: none"> <li>• Identify issues, concerns, &amp; possible solutions.</li> </ul>	Steele, Voytek
12:00-1:00	<b>Lunch</b> (catered)	All
1:00-1:15	<b>Framework of Report Output</b>	Conley, Kminek, Mogul
1:15-1:30	<b>Introduction to 2<sup>nd</sup> Breakout Session</b>	Conley, Kminek
1:30-3:00	<b>2<sup>nd</sup> Breakout Session (2 groups)</b> <ul style="list-style-type: none"> <li>• Design a life-detection protocol:</li> <li>• Test two 'null' hypotheses: 1) The samples contain no life. 2) The samples contain Mars life.</li> <li>• Best use of samples (progression from non-destructive to destructive testing).</li> <li>• Macro-scale measurements: <ul style="list-style-type: none"> <li>○ 3D Non-Destructive/Tomography Approaches</li> <li>○ Surface Analysis/Imaging Approaches</li> <li>○ Others?</li> </ul> </li> <li>• Micro-scale measurements: <ul style="list-style-type: none"> <li>○ Micro-scale Non-destructive Approaches</li> <li>○ Localized Probe-Type/Destructive Approaches</li> <li>○ Others? (AFM, ??)</li> </ul> </li> </ul>	Breakout Chairs
3:00-3:30	<b>Break</b> (catered)	All
3:30-4:00	<b>2<sup>nd</sup> Breakout Session Continued</b>	Breakout Chairs
4:00-4:30	<b>Report on Breakout Session</b> <ul style="list-style-type: none"> <li>• 10 minutes per group</li> </ul>	Breakout Chairs
4:30-5:30	<b>Discussion of 2<sup>nd</sup> Breakout Session</b> <ul style="list-style-type: none"> <li>• What have we learned today?</li> </ul>	Steele, Voytek
7:00-9:00	<b>Group Dinner</b> (restaurant)	All

## Friday, Feb. 17, 2012

<b>Time*</b>	<b>Activity*</b>	<b>Facilitator</b>
8:30-9:00 AM	<b>Coffee and Wake up Time</b> (catered)	All
9:00-9:15	<b>Summary and Objectives</b>	Conley, Kminek
9:15-9:30	<b>Risk Analysis and Decision Theory</b>	Parnell
9:30-10:30	<b>Return to 1<sup>st</sup> Breakout Session (3 groups)</b> <ul style="list-style-type: none"> <li>• What's missing?</li> <li>• Top three developments nobody else will do?</li> <li>• Future directions?</li> </ul>	Breakout Chairs
10:30-11:00	<b>Break</b> (catered)	All
11:00 AM-12:00 PM	<b>Report and Discussion</b> <ul style="list-style-type: none"> <li>• Protocol/s for samples from Mars...</li> <li>• Next steps?</li> </ul>	Steele, Voytek
12:00-1:00	<b>Lunch</b> (catered)	All
1:00-end	<b>Synthesis of Conclusions/Writing Assignments</b> <ul style="list-style-type: none"> <li>• Current status?</li> <li>• What needs to be done?</li> <li>• Volunteers for individual assignments...</li> </ul>	Conley, Kminek, Mogul